

CLAIMS

1. A breaking and splitting structure of a connecting rod such that surface hardening treatment is applied to a large end having a crank pin bore, the large end is broken and split into a rod section and a cap section, and the rod and cap sections are coupled with fastening bolts, with their broken and split surfaces engaged and aligned with each other, wherein a breakage-starting portion extending in the axial direction of the crank pin bore is formed in an inside circumferential surface of the crank pin bore of the large end, and the axial length of the breakage-starting portion is set smaller than the axial length of the inside circumferential surface.
2. The breaking and splitting structure of a connecting rod according to claim 1, wherein, of an intersection of the broken and split surface and the inside circumferential surface, a part where the breakage-starting portion is formed coincides with the breakage-starting portion, while most of the other part deviates from an extension of the breakage-starting portion.
3. The breaking and splitting structure of a connecting rod according to claim 1 or 2, wherein shoulders of the large end are each formed with a bolt hole extending in the direction perpendicular to the axis of the crank pin bore, and the bolt hole is formed close to the crank pin bore so that the thickness between the bolt hole and the inside circumferential surface is smaller than the thickness between the bolt hole and an outside wall.
4. The breaking and splitting structure of a connecting rod according to any one of claims 1 - 3, wherein one end of the breakage-starting portion is positioned at one end of the crank pin bore in the axial direction.
5. The breaking and splitting structure of a connecting rod according to claim 4, wherein the other end of the breakage-starting portion is positioned closer to the one end of the crank pin bore than to the bolt hole.

6. The breaking and splitting structure of a connecting rod according to claim 4 or 5, wherein the breakage-starting portion is constituted by a tapered groove formed by machining.

7. The breaking and splitting structure of a connecting rod according to claim 4 or 5, wherein the breakage-starting portion is constituted by a large number of pores formed successively at given intervals by laser machining.

8. The breaking and splitting structure of a connecting rod according to any one of claims 1 - 3, wherein one end and other end of the breakage-starting portion are positioned on both sides of a line so as to overstride the line connecting axes of the bolt holes and extending in the direction perpendicular to the axis of the crank pin hole, and wherein a length of the breakage-starting portion is set generally equal to or smaller than the diameter of the bolt hole.

9. The breaking and splitting structure of a connecting rod according to any one of claims 1 - 3, wherein a breakage-starting portion is formed at a position generally in agreement with the line a connecting the axes of the bolt holes and extending in the direction perpendicular to the axis of the crank pin hole.

10. The breaking and splitting structure of a connecting rod according to claim 8 or 9, wherein the breakage-starting portion is constituted by a large number of pores formed successively at given intervals by laser machining.